

Application No. 10/530,374  
May 10, 2006  
Reply to the Office Action dated December 13, 2005  
Page 7 of 10

REMARKS/ARGUMENTS

Claims 8-26 are pending in this application. By this Amendment, Applicant amends the Title of the Invention and adds new Claim 26

Applicant appreciates the Examiner's indication that Claims 9-16 and 21-25 would be allowable if rewritten in independent form including all of the features of the base claim and any intervening claims.

Claims 8 and 17-20 were rejected under 35 U.S.C. § 102(e) as being anticipated by Segawa et al. (U.S. 6,740,183). Applicant respectfully traverses the rejection of Claims 8 and 17-20.

Claim 8 recites:

“A method of producing a ceramic multi-layer substrate comprising the steps of:

preparing a composite laminate including an unfired ceramic laminate formed by laminating of a plurality of substrate ceramic green sheets, and a shrink-prevention ceramic green sheet arranged on at least one of the main surfaces of the unfired ceramic laminate, the shrink-prevention ceramic green sheet having a sintering temperature that is greater than the firing temperature of the unfired ceramic laminate;

firing the composite laminate at a temperature at which the unfired ceramic laminate is fired and which is less than the sintering temperature of the shrink-prevention ceramic green sheet; and

removing the shrink-prevention ceramic green sheet from the fired composite laminate; wherein

the step of removing the shrink-prevention ceramic green sheet includes:

**a first removing step of spraying a liquid material and compressed gas against the shrink-prevention ceramic green sheet on the main surface of the composite laminate subjected to the firing step; and**

**a second removing step of spraying ceramic powder, a liquid material, and compressed gas against the main surface of the ceramic multilayer after the first removing step.”**  
(emphasis added)

Application No. 10/530,374

May 10, 2006

Reply to the Office Action dated December 13, 2005

Page 8 of 10

With the unique combination of method steps and features recited in Applicant's Claim 8, including the steps of "a first removing step of spraying a liquid material and compressed gas against the shrink-prevention ceramic green sheet on the main surface of the composite laminate subjected to the firing step" and "a second removing step of spraying ceramic powder, a liquid material, and compressed gas against the main surface of the ceramic multilayer after the first removing step," Applicant has been able to provide a method of uniformly removing a shrink-prevention ceramic sheet in the production of a multi-layer substrate using the shrink-prevention ceramic sheet (see, for example, the paragraph bridging pages 4 and 5 of the Substitute Specification). In particular, a portion of the shrink-prevention ceramic sheet, which does not react with a glass component of the ceramic multi-layer substrate, is removed in the first removing step. Thereafter, a residual material, which is not removed in the first removing step, is removed in the second removing step. Thereby, the shrink-prevention ceramic sheet can be uniformly and cleanly removed from the sintered composite laminate.

The Examiner alleged that Segawa et al. teaches all of the method steps and features recited in Applicant's Claim 8, including "a first removing step of spraying a liquid material and compressed gas against the shrink-prevention ceramic green sheet on the main surface of the composite laminate subjected to the firing step; and a second removing step of spraying ceramic powder, a liquid material, and compressed gas against the main surface of the ceramic multilayer after the first removing step."

Applicant respectfully disagrees.

Contrary to the Examiner's allegations, at best, Segawa et al. teaches only a single removing step, and certainly fails to teach or suggest a first removing step and a second removing step as recited in Applicant's Claim 8. The Examiner alleged that the Abstract and col. 2, lines 40-65 of Segawa et al. teach a first removing step and a second removing step. However, the Abstract of Segawa et al. merely discloses that one of (1) water, (2) ceramic powder, or (3) water and ceramic powder is sprayed together with compressed air to remove the shrinkage suppression sheets, and col. 2,

Application No. 10/530,374

May 10, 2006

Reply to the Office Action dated December 13, 2005

Page 9 of 10

lines 52-57 of Segawa et al. disclose, “the shrinkage suppression sheets 1 formed on both faces of the green sheet laminated body 2 are removed by spraying a mixture of water and alumina powder from a nozzle 4 connected to a feeding pipe for supplying water and alumina powder mixture 5 and a feeding pipe for supplying compressed air 6.

In other words, Segawa et al. merely discloses that one of water and compressed air, ceramic powder and compressed air, or water, ceramic powder and compressed air are used to remove the shrinkage suppression sheets. Segawa et al. fails to teach or suggest that more than one of the three mixtures can be used in different steps to remove the shrinkage suppression sheets, and certainly fails to teach or suggest a method including “a first removing step of spraying a liquid material and compressed gas against the shrink-prevention ceramic green sheet on the main surface of the composite laminate subjected to the firing step” and “a second removing step of spraying ceramic powder, a liquid material, and compressed gas against the main surface of the ceramic multilayer after the first removing step” as recited in Applicant’s Claim 8.

Accordingly, Applicant respectfully requests reconsideration and withdrawal of the rejection of Claim 8 under 35 U.S.C. § 102(e) as being anticipated by Segawa et al.

In view of the foregoing amendments and remarks, Applicant respectfully submits that Claim 8 is allowable. Claims 9-26 depend upon Claim 8, and are therefore allowable for at least the reasons that Claim 8 is allowable.

In view of the foregoing amendments and remarks, Applicant respectfully submit that this application is in condition for allowance. Favorable consideration and prompt allowance are solicited.

To the extent necessary, Applicant petitions the Commissioner for a Two-Month Extension of Time, extending to May 15, 2006 (May 13, 2006 falls on a Saturday), the period for response to the Office Action dated December 13, 2005.

Application No. 10/530,374  
May 10, 2006  
Reply to the Office Action dated December 13, 2005  
Page 10 of 10

The Commissioner is authorized to charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 50-1353.

Respectfully submitted,

Dated: May 10, 2006

/Christopher A. Bennett #46,710/  
Attorneys for Applicant(s)

**KEATING & BENNETT, LLP**  
8180 Greensboro Drive, Suite 850  
Tyson's Corner, VA 22102  
Telephone: (703) 637-1480  
Facsimile: (703) 637-1499

Joseph R. Keating  
Registration No. 37,368

Christopher A. Bennett  
Registration No. 46,710